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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,831	03/06/2001	Edward L. Schwartz	74451.P127D3	3688

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EXAMINER

SHERALI, ISHRAT I

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 03/12/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,831

Applicant(s)

SCHWARTZ ET AL.

Examiner

Sherali Ishrat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Amendment

1. Pre amendment (paper # 6) have not been entered because of improper format.

It should include the following:

Please replace the paragraph beginning at page 2, line 3, with following rewritten paragraph.

This is a divisional application Serial number 09/784,928, filed on February 15, 2001, entitled "A Memory Usage Scheme for Performing Wavelet Processing" and assigned to the corporate assignee of the present invention.

Drawing

2. The drawing are objected to under 37 CFR 1.83 (a). The drawing must show every feature of the invention specified in claims. Therefore, the steps of the claimed method must be shown. Drawings does not illustrate any steps of the claims 1-20 such as selecting "one or more of the layers for quantization on sideband information accompanying the codestream", and "decompressing non-quantization layers", "quantization logic coupled to memory", "decoding logic coupled to the quantization logic", "the sideband information is stored in a marker segment of the code stream", and "selecting one or more layers is based on a target distortion".
3. The drawings are objected because handwritten characters inside the blocks of various drawing such as 6, 8 and 11 are not legible therefore not understood.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 8-11, 15-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng (A wireless Portable Video-on Demand System, IEEE 1063-9667/97).

Regarding claims 1, 15 and 20 Meng discloses receiving a codestream image data organized in plurality of layers (See Meng, fig 1 and 2 shows receiving subband codestream such as LH, HH, HL,...LL bands shown in page 6, paragraph 2.6, left-column, lines 1-14, which are organized in plurality of layers as LH, HH, HL,...LL bands),

selecting one or more of the layers for quantization based on sideband information accompanying the codestream (See Meng, page 6, paragraph 2.6, left column, lines 1-6, Meng shows "the input data of for the top level HL, HH is zero run length encoded the top level luminance HH as well as top level chrominance are all set to zero", i.e Meng shows selecting one or more of the layers for quantization based on sideband information by selecting HL and HH top level bands and zero run length encoding, it is noted that highest frequency bands HH and LH which contains large percentage zero and Meng shows nonzero coefficients are store in horizontal vector shown in page 5, paragraph 2.4, right- column, lines 13-14, thru page 6, paragraph 2.4,

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left- column, lines 1-3, i.e Meng shows horizontal vector which contain non-zero coefficients which is a sideband information which is store in horizontal vector and thereby provide information which bits are zero therefore zero run length encoded [quantizing]); and

decompressing non-quantized layers of the codestream (See Meng, page 6, paragraph 2.6, left-column, lines 12-17, Meng shows skipping HL and HH data which are zero run length encoded processing LL and LH data to generate image data i.e Meng shows decompressing LH and LL data which are unquantized because they are not zero run length encode as HL and HH).

Meng however has not explicitly shown each of the plurality of layers comprises coded data that adds visual value to the image. However in the subband coding such as shown by Meng on page 6, paragraph 2.6, left-column, lines 1-6, zero bits in the bands such as top level HH and HL signifies insignificant coefficients or non zero bits in LL and LH band are significant coefficients therefore in the system of Meng LL and LH bands which are coded data and because of non zero bits [significant bits] these bits in LL and LH adds visual value to the image data because they are important bits to recover or decompress image data.

Regarding claims 2-4, 9-11 and 16-18, Meng discloses JPEG and storing sideband information in marker segment of codestream (See Meng shows JPEG, paragraph 1, page 4, left –column , lines 1-2, and on page 5, paragraph 2.4, right-column 13-14, Meng shows high frequency subbands, the system uses 32-dimension horizontal vector, page 5, paragraph 2.4, left-column, lines 1-4, decoder transmits to the subband

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decoder the values of non-zero coefficients and zero-run length i.e Meng shows storing in horizontal vector value of non-zero coefficients and zero run length information which is sideband information is stored in marker segment of codestream.

Meng however, has not explicitly shown sideband information, marker segment comprise comment marker, and comment marker comprise JPEG 2000 COM marker. However such limitations comment marker and JPEG 2000 COM marker does not carry patentable weight and these limitations are designed choice. Comment marker and JPEG 2000 COM marker are part of current JPEG and can be use to store the side band information of Meng system.

Regarding claim 8, Meng discloses the difference between claim 1 and which is the following:

a memory to store distortion characteristics (See Meng, page 5, paragraph 2.4, right- column, lines 13-14, thru page 6, paragraph 2.4, left- column, lines 1-3, Meng shows horizontal vector which contain non-zero coefficients, i.e Meng shows these non-zero coefficient are necessary for coding distortion free image);

quantization logic coupled to the memory to quantize a codestream (See Meng, page 6, paragraph 2.6, left column, lines 1-6, Meng shows "the input data of for the top level HL, HH is zero run length encoded the top level luminance HH as well as top level chrominance are all set to zero", i.e quantizing by zero run length coding and only coefficients are not zero run length coded which are nonzero coefficients are store in horizontal vector shown in page 5, paragraph 2.4, right- column, lines 13-14, thru page 6, paragraph 2.4, left- column, lines 1-3, i.e Meng shows horizontal vector which contain

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non-zero coefficients therefore quantization by zero run length is coupled to the memory which shows non zero coefficients);

decoding logic coupled to the quantization logic to decompress non-quantized layers of codestream (See Meng, page 6, paragraph 2.6, left-column, lines 12-17, Meng shows skipping HL and HH data which are zero run length encoded [quantization logic] processing LL and LH data to generate image data i.e decoding logic coupled to the quantization logic to decompress non-quantized layers of codestream).

6. Claims 5-7, 12-14 and 19 are are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng (A wireless Portable Video-on Demand System, IEEE 1063-9667/97) in view of Joshi et al. (US 6,650,782).

Regarding claim 5-7, 12-14 and 19 , Meng has not explicitly shown selecting one or more layers based on meeting a target rate, plurality layers are predefined based on resolution so that selecting the one or more layer is based on meeting target, plurality of layers are predefined based on the viewing distance so that selecting one or more layers is performed to display different viewing distances.

In the same field of endeavor Joshi discloses selecting one or more layers based on meeting a target rate (See Joshi, col. 5, lines 1-5, Joshi shows determining the visual significance of a bit-planes in terms of threshold in terms of viewing distance and 29-31, Joshi shows discarding least significant bit-planes, i.e Joshi shows selecting one or more bit-planes [selecting layers] for meeting a target [viewing distance] and discarding least significant bit-planes which are not needed for required viewing distance),

plurality layers are predefined based on resolution so that selecting the one or more layer is based on meeting target (See Joshi, col. 6, lines 19-24, overall threshold viewing distance for the reconstructed image is determined and col. 5, lines 1-5, Joshi shows determining the visual significance of a bit-planes in terms of threshold of viewing distance i.e plurality layers [bit planes] are predefined based on resolution of reconstructed image thereby meeting target of resolution of reconstructed image),

plurality of layers are predefined based on the viewing distance so that selecting one or more layers is performed to display different viewing distances (See Joshi, col. 6, lines 19-24, overall threshold viewing distance for the reconstructed image is determined and col. 5, lines 1-5, Joshi shows determining the visual significance of a bit-planes in terms of threshold viewing distance i.e plurality layers [bit planes] are predefined based on resolution of reconstructed image thereby meeting target of resolution of reconstructed image of required viewing distance).

Therefore it would have been obvious to having ordinary skill in the art at time the invention was made to shown selecting one or more layers based on meeting a target rate, plurality layers are predefined based on resolution so that selecting the one or more layer is based on meeting target, plurality of layers are predefined based on the viewing distance so that selecting one or more layers is performed to display different viewing distances as shown by Joshi in the system of Meng because such a process provide inexpensive method for determining truncation point for the compressed bit stream so that compressed bitstream does not exceed user specified bit budget thereby saving the cost of expensive memory and overall quality of image is maximized.

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Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 703-308-9589. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are 703-87-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-4750.

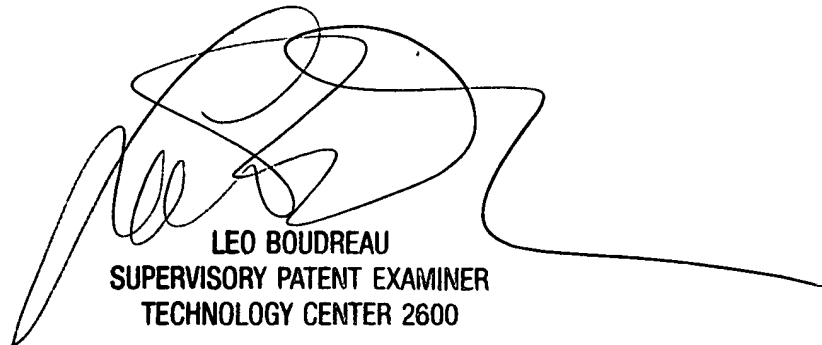


Ishrat Sherali

Patent Examiner

Group Art Unit 2621

March 4, 2004



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